

3. Physica Scripta Vol. 15, (1977) Pages 163 - 166.

Some Properties of Commutators and the Equations of Motion

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Abstract

In this paper we calculate the commutators of operator functions for the non - commuting operators on a Heisenberg ring. The commutator of two operators can be expressed with the help of the fundamental operators and their differentials. Using the theorem of the derivative of a function of operators with respect to any parameter, we can find the equation of motion of a system, in canonical and non - canonical quantum mechanics. We find, as well with the same method, the equation of motion in the Wigner representation.